Application No. 10/625,208   Docket No.: 65858-0021
Reply to Office Action of December 22, 2006

CLAIMS

1.   (Currently amended) A classification system comprising:

a vector subsystem, including a sensor image and a feature vector, wherein said vector subsystem provides for generating said feature vector from said sensor image; ~~and~~

a determination subsystem, including a classification, a first confidence metric, and a historical characteristic, wherein said determination subsystem provides for generating said classification from said feature vector, said first confidence metric, and said historical characteristic; and

        a sensor image processing subsystem, said sensor image processing subsystem including an input sensor image, wherein said sensor image processing subsystem generates said sensor image from said input sensor image;

        wherein said sensor image processing subsystem performs a light evaluation heuristic to set a brightness value;

        wherein said sensor image processing subsystem further includes a plurality of processing heuristics, wherein said sensor image processing subsystem provides for selectively invoking one or more of said processing heuristics using said brightness value;

        wherein said light evaluation heuristic is a day-night determination heuristic and said brightness value is a day-night flag capable of being set to a value of day or a value of night; and

        further wherein a day-night flag value selectively triggers said sensor image processing subsystem to perform at least one of the processing heuristics.

2.   (Original) The system of claim 1, said determination subsystem further including a second confidence metric, wherein said determination subsystem provides for generating said classification with said second confidence metric.

3.   (Original) The system of claim 1, wherein said historical characteristic comprises a prior classification and a prior confidence metric.

4.   (Original) The system of claim 1, wherein said sensor image is captured by a digital camera.

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5.   (Original) The system of claim 1, wherein said sensor image is in the form of a two-dimensional representation.

6.   (Original) The system of claim 1, wherein said sensor image is in the form of an edge image.

7.   (Original) The system of claim 1, further comprising a airbag deployment mechanism, said airbag deployment mechanism including a disablement decision, wherein said airbag deployment mechanism provides for generating said disablement decision from said classification.

8.   (Currently amended) The system of claim 1, ~~further comprising a image processing subsystem, said image processing subsystem including~~ wherein said input sensor image is a raw sensor image, ~~wherein said sensor image processing subsystem generates said sensor image from said raw sensor image~~.

9-11. (Canceled)

12.   (Currently amended) The system of claim 1[[11]], wherein ~~a~~ said day-night flag value is a value of day and triggers said sensor image processing subsystem to perform a day processing heuristic.

13.   (Original) The system of claim 12, wherein said day processing heuristic comprises at lease one of a gradient image heuristic, a boundary erosion heuristic, and an adaptive edge thresholding heuristic.

14.   (Currently amended) The system of claim 1[[11]], wherein ~~a~~ said day-night flag value is a value of night and triggers said sensor image processing subsystem to perform a night processing heuristic.

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15.   (Original)   The system of claim 14, wherein said night processing heuristic comprises at least one of a brightness threshold heuristic and a silhouette extraction heuristic.

16.   (Original)   The system of claim 1, wherein said feature vector comprises a plurality of Legendre orthogonal moments.

17.   (Original)   The system of claim 1, wherein said feature vector comprises a plurality of normalized feature values.

18.   (Original)   The system of claim 1, wherein said determination subsystem provides for invoking a k-nearest neighbor heuristic to generate said classification.

19.   (Original)   The system of claim 18, wherein said k-nearest neighbor heuristic comprises a distance heuristic.

20.   (Original)   The system of claim 19, wherein said distance heuristic calculates a Euclidean distance metric.

21.   (Original)   The system of claim 1, wherein said determination subsystem accesses a historical classification and a historical confidence metric to generate said classification.

22.   (Original)   An airbag deployment system, comprising:
       a plurality of pre-defined occupant classifications;
       a camera for capturing a raw image;
       a computer, including an edge image and vector of features, wherein said computer generates said edge image from said raw image, wherein said vector of features is loaded from said edge image, and wherein one classification within said plurality of pre-defined occupant classifications is selectively identified by said computer from said vector of features; and

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an airbag deployment mechanism, including a classification and an airbag deployment determination, wherein said airbag deployment mechanism provides for generating said airbag deployment determination from said classification;

wherein a ranking heuristic is performed to calculate a first confidence metric and a median distance heuristic is invoked to compute a second confidence metric, wherein said computer selectively identifies said classification with said first confidence metric and said second confidence metric.

23.   (Original)   The system of claim 22, further comprising a day-night flag, wherein said computer further includes a plurality of processing heuristics from generating said edge image from said raw image, and wherein said computer uses said day-night flag to selectively identify one said processing heuristic from said plurality of processing heuristics.

24.   (Original)   The system of claim 22, wherein said vector of features comprise a plurality of Legendre orthogonal moments.

25.   (Original)   The system of claim 22, wherein said computer calculates a Euclidean distance metric from said vector of features by invoking a k-nearest neighbor heuristic.

26.   (Canceled)

27.   (Original)   The system of claim 22, wherein a said computer accesses a historical characteristic before said computer generates said classification.

28-31. (Canceled)

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